

Claims

1. A vehicle with a door that has a lock (39) cooperating with means on a pillar (34) **characterised in that**
the door has a supporting frame (10) substantially in the form of a rectangular annular hat beam (13-16) of high-strength steel, which, with its outer side flange (17), carries the outer panel (28) of the door and has its crown (12) towards the vehicle interior, the rear portion of the hat beam (17) having a bolt (32) arranged to fit into a hole (35) in the pillar (34).
2. A vehicle according to claim 1, **characterised in that** the bolt (32) is arranged on the lower, rear portion of the outer flange (17) of the hat beam.
3. A vehicle according to claim 2, **characterised in that** said hole (35) is disposed on the lower portion of the pillar (34), which is widened in a bow form forwards towards its joining with a side rail of the vehicle, and the lower rear bend (30) of the hat beam is adapted to the widened portion of the pillar so that the outer side flange (17) is widened to cover the widened portion of the pillar and carries the bolt on this widened portion.
4. A vehicle according to claim 1 or 2, **characterised in that** the bolt (32; 39,40) has a thread and is secured by a nut (33) at the outer side of the flange, the bolt being located on a step (31) on the outer flange (17) so that a space for the nut is provided between the side flange and the outer panel (28).
5. A vehicle according to any one of the preceding claims, **characterised in that** the door is a front door and the pillar (41) is a B-pillar with hinges (42,43) for a rear door, and the pillar has a hole (44,45 for a bolt adjacent each hinge, the rear portion of the frame (10) having bolts (39,40) adapted to fit into these holes.

6. A vehicle according to any one of the preceding claims, **characterised by** a side impact guard (22; 46-51) between the two standing portions (13,15) of the hat beam.
7. A vehicle according to claim 6; **characterised in** that the side impact guard (22) is formed, as an integral part of the door frame, from the same sheet blank as the door frame.
8. A vehicle according to claim 7, **characterised in** that the side impact guard (22, 46-51) comprises a hat beam.
9. A vehicle according to any one of claims 7-8, **characterised in** that the side impact guard comprises a beam (46-48) between the vertical portions (13,15) of the door frame and a beam (49-50) between the horizontal portions (14,16) of the door frame.
10. A vehicle according to any one of the preceding claims, **characterised in** that a deep inner panel (36) is mounted on the supporting frame (10) of the door and does not cover the step with the bolt but covers the interior elements of the door, such as for example the window structure, which are placed between the inner panel and the supporting frame.
11. A vehicle door; **characterised in** that it comprises a supporting frame (10) substantially in the form of a rectangular annular hat beam (13-16) of high-strength steel, which, with its outer side flange (17), carries the outer panel (28) of the door and has its crown (12) towards the vehicle interior, the rear portion (31) of the hat beam (17) having a bolt (32) arranged to co-act with a pillar.
12. A vehicle door according to claim 11; **characterised by** a side impact guard (22, 46-51) formed, as an integral part of the door frame, from the same sheet blank as the door frame and extends between two standing portions (13,15) of the hat beam.

13. A vehicle beam according to claim 12; **characterised in** that the side impact guard (22, 46-51) comprises a hat beam.
14. A vehicle door according to claim 12 or 13, **characterised in** that the side impact guard comprises a beam (46-48) between the vertical portions (13,15) of the door frame and a beam (49-50) between the horizontal portions (14,16) of the door frame.
15. A vehicle door according to any one of claims 11-14, **characterised in** that an inner panel (36), mounted on the supporting frame (10), is deep relative to the frame and does not cover the part (31) of the outer side flange (17) that carries the bolt (32), but covers the interior elements of the door, such as for example the window structure (37), located between the inner panel and the supporting door frame.
16. A vehicle door according to any one of the claims 11-14, **characterised in** that the steel of the frame (10) has a yield strength of at least 800 N/mm², preferably at least 1000 N/mm².